

# 1. SUMMARY

## 1.1. DESCRIPTION OF THE PROJECT AND EVALUATION CONTEXT

The project „Development of small and medium sources of energy and related distribution networks in selected regions of Palestine” (VZ 50017198) was implemented in 2006-2011 with support from the Czech Development Cooperation (CZ DC). The initial development objective was „...to contribute to renewal of cooperation with the Palestinian Authorities and at the same time to the renewal of cooperation between Czech manufacturing companies and suppliers with supply companies in Palestine. In the scope of this evaluation this objective was reformulated: The development objective of the project was in our opinion to „...contribute to the improvement of economic and social situation of local population and to the economic development in Tubas and Jenin governorates by modernizing and extending electricity supply in the respective areas.“

Following the request of the partner organization (and the main recipient of the project), Tubas District Electricity Company (TDECO) the target group was revised from initial 11 municipalities to 36 clients of TDECO including municipalities, village councils, a university and industrial and agricultural complexes in the Tubas and Jenin governorates. The target group also includes TDECO as the main recipient and Palestinian Electricity Company (PEA) – partner institution at the central level which also co-financed the project.

In view of the absence of logical framework, the evaluation team also reconstructed the project intervention logic.

The main purpose of the evaluation was to obtain objectively, well-founded information that can be used for decision making by the Ministry of Foreign Affairs of the Czech Republic (MFA CZ) in cooperation with the Czech Development Agency (CZDA) about the overall perspective and future direction CZ DC in Palestine with respect to production and supply of energy and related sectors.

The evaluation approach was comparative non-experimental comparing the intervention areas and beneficiaries before and after the project. Baseline data were compared with information about situation after the project completion. This approach did not allow convincing demonstration of causality between project interventions and the result but was the only feasible in the absence of a reference area/group. In theory, it could have been possible to compare groups participating in the project with groups outside the project bearing identical characteristic. This possibility however was excluded due to shortage of time and information required for the identification of such groups. Project impacts were therefore assessed on the basis of before and after intervention.

Evaluation methodology took into consideration the evaluation objectives and client’s expectation. Conclusions and recommendation are evidence based. The evaluation matrix including evaluation questions (Annex K) has been consulted with and accepted by the Reference Group. Visibility of CZ DC was added as an additional criterion. The evaluation approach was participatory involving key stakeholders and other informants and information sources from both the public and the private sector including the target groups. Evaluation was implemented at three stages: (i) Preparatory phase (before field work) aiming at the consolidation of and consensus on the evaluation questions and gathering information from available secondary data and interviews. (ii) Field investigations where additional information was gathered for testing the hypothesis formed during the preparatory phase. This phase included gathering of additional information on outputs and outcomes of the project, on factors facilitating or inhibiting implementation as well as preliminary analysis of findings related to the evaluation questions.

## 1.2. MAIN FINDINGS AND CONCLUSIONS

Below is a summary of evaluation conclusions according to the evaluation criteria.

Evaluation criteria		Rate of fulfilment
Relevance		High
Effectiveness		High
Efficiency		Not possible to assess
Impact		High
Sustainability		Rather low
Cross cutting issues	Governance	High
	Gender	High
	Environment	High
Visibility of CZ DC <sup>1</sup>		High

### Relevance

The evaluated project was fully compliant with the priorities of CZ DC and was also included in the list of bilateral projects CZ DC for 2006. Palestine and energy are included in *The Development Cooperation Strategy of the Czech Republic* for 2010 - 2017; sector priorities energy and environment. Czech Republic is the main partner for electrification in the project area. The initial target group was revised and locations selected to be relevant and in line with priorities of the Palestinian partners. The project complements previous currently ongoing and planned projects CZ DC and other donors in the concerned area. Technical solutions and technologies used were in accordance with the requirements of the system and modern technologies. Partner organizations and other target groups consider the project highly relevant and contribution of CZ DC to the overall development of electrification in the project area very important. The current priority of the project partner (and main recipient) TDECO is extension and modernization of the low voltage (LV) network and, on a smaller scale, also extension of the high voltage (HV) network.

The overall rating of relevance is **high**.

### Effectiveness

By contributing to the extension of the (HV) network from 66 km in 2006 to 167 km in 2011, the project helped to connecting remoter residential areas as well as of industrial and agricultural SMEs. 36 clients were connected to the HV network in June 2012. As the result of access to modern technologies, segmentation, long distance monitoring and using ABC cables both the reliability and the safety of both the HV and LV networks increased. SCADA covers all main points in the HV network. Power cuts happen once every 3-4 months and as long as it is not interruption of supply from IEC, most repairs are done within half an hour. Maintenance is taken care of by two teams of well trained technicians equipped with modern technologies. When GIS, SCADA and AMI will be fully operational, TDECO will have full control over both the HV and LV networks. The evaluation team reviewed available records, information from the SCADA system and the TDECO management information system and spot checks on the HV system and concluded that it is in a good condition. Technologies and equipment supplied under the Czech assistance reflect the local requirements and correspond with the „best available technology“(BAT) principle. Capacity of the network should be sufficient to cover client’s demand assuming an annual growth in demand of 7% and non-revenue electricity (NRE) remains around 9%. The key assumption is availability of sufficient energy from the IEC and other external sources.

On the basis of Presidential Decree issues in 2009, TDECO started from 2011 to take over LV networks from its clients. At the time of evaluation, TDECO was responsible for the management, operation and maintenance of 23 such networks that take about 85% of the electricity from the HV network. This includes some 16,000 connections serving about 75,600 end users. The LV networks are generally in poor condition and require rehabilitation, modernization and extension. End users complain about power cuts occurring 2-3 times per month that can last for 1 hour and longer. Fluctuations in voltage are in some places considerable, can lead to problems with the operation of equipment and appliances and cause their damage. Until the LV network is modernized and extended, and the capacities of TDECO increased to reflect the increased scope of responsibility, the situation will further deteriorate in the future.

While we do have reservations regarding „unconventional“ planning of the project and partial gaps in the documentation, resulting mainly from the shortcomings of the project cycle management by the Czech

<sup>1</sup> Visibility of CZ DC was added as an additional criterion

authorities at the time of the project inception, the evaluation team concluded that the objective of the project has been met.

The overall rating of effectiveness is **high**.

### **Efficiency**

The evaluation team did not have sufficient data to establish itemized expenditure and financial flows. The implementation Contract for the CZ DC project (16.7.2006) has been amended several times in the form of Addendums in both the scope and the budget. The total cost of the project cannot be exactly determined because of inconsistencies among different documents (price without VAT, with VAT and all levies, or not specified). This makes comparison between sources impossible. The fact that supplies, services and works were co-funded by PEA and TDECO, in some cases the municipalities, contributes to the difficulty to assess financial efficiency. Information about the trainings and study tours is minimal. Detailed work plan/implementation schedule for the whole project duration is not available.

Supplies were, according to the handover protocols, delivered in accordance with annual approvals, however with some changes in technical specifications. This was confirmed during the evaluation by TDECO as well as spot-checks done by the evaluation team. Reconciliation of expenses and initial budget is not possible because: (i) the initial budget is not itemized and (ii) supplies were defined on an ad-hoc basis depending on the expected availability of funds; funds were utilized after their yearly releases. Technical design with specifications does not exist. The supplied materials and equipment are of good quality and reflect the requirements of both TDECO and PEA.

The implementer was reportedly checking the supplies and installations. The project was effectively monitored by TDECO and the Representative Office of the Czech Republic. Logical framework was not formulated and therefore not used. PEA was regularly informed on the progress by TDECO. The Ministry of Industry and Trade delegated the responsibility for monitoring to the Representative Office of the Czech Republic.

For the reasons mentioned above, **efficiency could not be evaluated and rated**.

### **Sustainability**

#### **Capacity**

The HV network is fully functional and its capacity as well as the capacity of supplies from IEC covers today's demand. Problems with low voltage at the tail ends of the network can be solved by installing additional transformers. The HV network was conceptualized on the assumption of annual growth of 7% based on experience from previous years; losses were to remain about 9%. However, the actual annual demand is now estimated to grow with 15% p.a. Adjusting the supply from the HV network to higher-than-expected demand could require additional investments and procurement of additional power from IEC/other external sources.

#### **Financial sustainability**

Financial situation of TDECO has over the past years deteriorated; the company is today loss-making and subsequently not in the position to invest in the networks and to ensure proper maintenance. Main reasons identified during the evaluation include: (i) Decision by PERC to decrease tariffs. (ii) Increased prices charged by IEC. (iii) Taking over the LV networks. (iv) Relatively low rates of fee collections. If the fees will not increase and the system for their collection is not streamlined soon, and/or if there are no subsidies for repairs, maintenance and investments, the financial situation will not improve.

#### **Technical sustainability of the network**

The technical sustainability of the HV network is high; the network is modern, trained staff continues working and the operation and maintenance are thus technically secured. The Information System Department is headed by a lady Electrical Engineer who masters SCADA, GIS and AMI. Additional 5 staff can operate SCADA two GIS and two AMI. Technical support for these information technologies and spare parts are available locally.

The LV networks are in bad technical condition, which will further deteriorate with consequences for the end users; without interventions for improvements the positive impacts of the project will decrease.

Long-term sustainability is rated as **rather low**.

### **Impacts**

Increased accessibility to connections to the HV network contributed to visible impacts in the project area. This is appreciated by the beneficiaries; the „Czech project” is widely known:

- Accessibility to relatively cheap energy with relatively small fluctuations in outputs from the HV network contributed to increased productivity, decreased the cost for operation and resulted in the growth in number and size of small and medium enterprises, cottage industries and commercial agricultural production.
- Subsequently, increased numbers of employees and seasonal workers can find jobs. Unemployment in the Tubas governorate decreased from 17% in 2006 to 14% in 2011<sup>2</sup> (average for the West Bank: 23.6% in 2006, 21% in 2011<sup>3</sup>). In Zababdeh for example employment decreased from 25% to 10% during the same period of time<sup>4</sup>.
- The numbers of internet cafés are growing.
- Increased coverage of mobile networks.
- Increased used of ICT in schools and households.
- Also improving is drinking water supply and in the future potentially waste water treatment. JWSSC plans to establish modern waste water treatment plant using technology that would not be possible without the access to reliable supply of electricity.

In the villages and towns connected to the TDECO network are about 25,700 connections to the LV network, serving some 118,000 inhabitants as well as institutions, services and small enterprises.

- By connecting town and villages to the HV network the project contributed indirectly also to improvements of services in public, educational and health institutions.
- Households can acquire modern kitchen appliances without the fear that it will be prematurely damaged by high fluctuations in voltage. Public lighting contributed to improved safety (particularly appreciated by women/mothers).
- Replacing LV wiring by ABC cables increased safety in cases when damaged wires fall on the ground or on buildings. (There were a few fatal cases caused by such accidents.)
- Accessibility to electricity connections (along with other infrastructure) supports settlement of new areas by local population, followed by development of services and small entrepreneurship.

The project had also unforeseen impacts, mainly unpredicted speeding up of enterprise development, resulting in overload for both the HV and LV networks.

The project had a positive impact on economic and social situation and contributed to the overall development in the project area. Impact is rated as **high**. *It can however be expected that long-term impacts will be reduced in view of their sustainability.*

### **Good governance**

TDECO has been from the very beginning the owner, co-financer and co-implementer of the project, which was co-funded also by PEA. As a result of the ownership structure and consultative approach of TDECO, both the municipalities and village councils took an active part in the project planning and implementation. JWSSC participated in the project planning and implementation with the main interest of extending drinking water supply and implementing waste water treatment plant. Cooperation between TDECO and the implementer has been described by both parties as excellent.

Overall rating of good governance is **high**.

### **Human rights and gender equity**

The project was beneficial for women, men as well as for the whole families. Women in the project area are typically home makers. Availability of reliable electricity supply makes possible the use of modern electric household appliances thus decreasing the physical effort and saving time. Women from poorer households can find seasonal work in the fields and thus contribute to the household budget. Men in the project area are typically breadwinners. Their opportunities to find jobs in the growing industries, agricultural and service sectors increased. The cost of energy for small, family size enterprises that depend on power supply decreased. Both adults and the children can keep pace with modern communication technologies, bridging the „digital gap“. Availability of electricity contributed to improved learning and working conditions. Safety on the streets has increased due to public lighting.

Rating for human rights and gender equity is **high**.

<sup>2</sup> Source: Palestinian Bureau of Statistics, 4.6.2012

<sup>3</sup> Source: Palestinian Bureau of Statistics, 4.6.2012

<sup>4</sup> Source: Municipality of Zababdeh

### **Environment and climate**

Using generators as the main sources of electricity supply in the area covered by the TDECO network almost stopped. This contributed substantially to the improvement of the environment by decreasing emissions, excessive noise and possible contamination of soil surface and shallow surface water by oil spills thru handling the fuel for generators. Related positive impact is decreased traffic of oil cisterns. The majority of generators were put out of operation in the period 1996-2003, but the process continued also during the second phase of the project. From 8 interviewed respondents who used generators as the main source of electricity, none is using them now or plans to use them in the future.

The overall rating for environmental protection and mitigation of climate change is **high**.

### **Visibility of CZ DC**

Visibility was ensured partly by stickers, in particular on larger surfaces such as transformers or service vehicles, to a lesser extent information boards. Main media was local radio broadcasting where TDECO, municipalities and village councils informed about the project and its progress. The project is widely known and considered successful at all levels including PEA, local institutions, as well as TDECO employees and the general public in the project area. Development of the region is linked with the Czech Republic; during all meetings, the importance of stable supply of energy for development of farming, SMEs, development of educational and health services including drinking water supply and the betterment of living conditions for all has been emphasized.

Visibility is rated as **high**.

## **1.3. RECOMMENDATIONS**

### **Recommendations related to project and continuation of CZ DC**

Recommendation	Main addressee	Degree of importance
To continue supporting complementary projects where the following project builds (at least partially) on the results of previous successful projects.	CZDA	1
Preparing Inception Report (IR) that would include changes and modification in the institutional framework, completing baseline, updating the LFA (theory of change) including assumptions and risks to the sustainability and utilization of results. IR should be prepared within 3 months from the commencement of project.	CZDA	1
In the absence of necessary investments in the LV networks and increasing institutional capacity of TDECO, LV networks under TDECO's responsibility are in the long-term not sustainable and positive impacts on the end users questionable. It is therefore recommended to continue supporting electrification in the Tubas and Jenin governorates.	CZDA	2

### **Recommendations to processes and mechanism**

Recommendation	Main addressee	Degree of importance
Continuous project external financial monitoring	CZDA	1
English as the language of project documentation and evaluation reports	MFA CZ, CZDA	1
Debriefing of key stakeholders by the evaluation team	MFA CZ	1
Evaluation budgets to be at least 3% of the project budgets	MFA CZ	2
It is recommended that in the framework of the EU, the Czech Republic supports the possibility for donors/member states to apply the organizational principle of subsidiarity in development cooperation with emphasis on the role of local institutions and organizations in cases where it is considered (by the donors/member states) more effective.	MFA CZ	3